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On the issue of readiness of first Graders

The research is carried out in

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უნივერსიტეტის
განმანათლებლობის
სამეცნიერო ცენტრი

Topicality of theme. The progress-oriented modern society makes high demands to the education system. For education system to answer new, increased demands, it has to have well structured network. School psychologist is an important figure of this network. Activity of school psychologist is aimed at creation of social-psychological conditions necessary for development and successful study of each child in school environment, at development and adoption of methods and activity, which will provide successful functioning of school. Some schools in Georgia have allotted “psychologists hour” for school psychologists.

From this point of view, problem of first grader’s readiness for school is especially important for school psychologist, as one of the main reasons of ill success is not readiness of first graders for school. School requires from children observance of school routine and fulfillment of activity, which teacher gives them. And pupil is obliged to take it upon himself and fulfill it. To meet requirements of school first grader’s organism has to be developed to such level that he will be able to sit during lesson at one place in almost one position and check his impulses. For fulfillment of teachers task pupil first has to perceive the said, understand, memorize and then realize it in necessary situation. For this his perception, memory, thinking and imagination have to be developed to certain level, and he should be able to spring these processes into action, when it’s required by a task given from without. From its part, fulfillment of the given task is possible when a person is able to control psychical and motoric apparatus.

Thus, in the notion of readiness for school, preparedness of motoric apparatus, intellectual functions and social-personal readiness are meant. In case of unavailability of any of these functions the first grader does not meet school requirements, which is reflected on academic progress of a pupil and causes his school dysadaptation.

Relying on theories of psychological readiness for school, study of intellectual and social-personal aspect of the given phenomena, research of immature functions and consideration of the received results, working out of developing study programs basing on psychological and social requirements of younger school age child is an innovation for our country. The present developmental program is necessary material for psychologist working in school.

The concrete aim of the research is study of intellectual and social-personal readiness of the first graders. Intellectual and social-personal immaturity for school life is a causing reason of school problems in future. That’s why our experiment was directed to detection of immature functions and working out of developing methods of the given functions in order to avoid difficulties originated during pupils study process.

Theoretical value of the research is that in the work there are reviewed theories on readiness for school of well-known psychologists (Sh. Chkhartishvili, L. Vigotsky, L. Bozhovich, D. Elkonin), as well as of modern specialists (N. Gutkina, N. Salmina, N. Nizhegorodceva).

Practical value of the research is that after analysis of the results of study of psychological readiness of the first graders we worked out special developmental program directed at development of psychical functions of pupils. Efficiency of the given developmental program makes its wide application available. Novelty of the given study is indisputable, as the developmental programs contain tasks worked out by us, as well as old Georgian games recorded by Georgian folklorists and games included in developmental lessons adopted by French schools.

Results if the research and their discussion

The goal of our research was study of pupils' psychological readiness towards school education and individual peculiarities of first graders. We've tried to answer the following questions: 1) Are our first graders ready or not to go to school both from intellectual and personal point of view? 2) Is disharmony between intellectual and social-personal readiness for school is kept? 3) What is academic progress of pupils, who were not ready in the I grade nor from intellectual neither from personal point of view? 4) What is the picture among 5th graders from the point of view of school readiness?

Relying on the given picture we have decided to plan developmental lessons aimed at development of existing immature functions in order to avoid school dysadaptation of pupils. We have put forward study hypotheses: 1) As a result of reform carried out in the education system in the 60s of the past century age of starting study at school - 7 year-old, was lowered by 1 year. Program meant for psychical peculiarities of 7 year-old child was mechanically carried over to 6 year-old children. Today all children of 6 and those of 5, which become 6 till 1st January are accepted to Georgian schools. We supposed the hypothesis that certain part of first graders is not ready for school life (especially 5 year-olds); 2) Children of the state-of -the-art epoch has much more information compared to their age children had 20-30 years ago, as the present-day preschoolers pass most of the day at home, before TV-set and computer, that's why we supposed the second hypothesis that the level of social-personal development of the modern first grader must be behind their intellectual development level; 3) Psychological immaturity of preschoolers must be reflected at pupils academic progress; 4) After detection of immature psychical functions of first graders carrying out of prepared by us developmental program should cause development of the given functions; 5) And development of the given functions should improve academic progress of pupils.

Basing on the theories of school psychological readiness (Sh. Chkhartishvili, D. Elkonin, A. Kern, J. Jerasek), as a method of study of intellectual readiness we used G. Vitslak's test, which determines ability of 5,5-7 year-old child to study and the level of their intellectual development. And for study of social-personal readiness we chose program worked out by N. Gutkina: "Determination of 6-7 year-old children readiness for school".

The test of G. Vitslak consists of 15 subtests and makes it available to study the following spheres:

- 1) **Learning capability;**
- 2) **Speech development level;**
- 3) **General consciousness;**
- 4) **Handling ability with quantitative multiplicity;**
- 5) **Knowledge of forms and their differentiation;**
- 6) **Color and form differentiation ability;**
- 7) **Ability to work with pencil and pen, orientation in small space;**
- 8) **Classification of subjects, development of thinking;**
- 9) **Memory.**

The test consists of the following subtests:

1) Sequential pictures:

The given subtest consists of 2 series. Each contains 3 pictures.

In the first series the plot “**Building of a castle**” is used as introductory task. The adult himself sequentially places picture before a child and narrates a story. After that the adult picks up pictures and asks a child to repeat in short what he had listened. If necessary the adult can put leading questions.

Despite the quality of story reproduction experimenter forms his opinion once again.

The second series is already general task.

Experimenter puts before a child 3 pictures and asks him to make up a story. The adult does not help a child anymore. After fulfillment of task experimenter picks up pictures and asks a child to repeat in short imagined plot.

Task performance is assessed as follows: 7 points are given if a child has conveyed well the sense of all three pictures, directed attention to the plot’s essence; 5 points – a child has conveyed his sense well, but directed his attention equally to essential and secondary details; 3 points – a child managed to convey the sense only in 2 pictures. In summary he directed main attention only to secondary details; 2 points – a child couldn’t find semantic connection between pictures and described them separately; 0 points – a child couldn’t compose a story at all.

2) Knowledge of colors:

12 colors are put before a child and he is asked to name them. The task is assessed as follows: for each correct answer child receives 1 point.

3) Learning of four-line rhyme:

Experimenter asks a child to learn a rhyme by heart in order to tell it to mother or grandmother at home. At first an adult reads the whole four-line rhyme, and then the rhyme learning process starts. Process of learning by heart consists of three parts. At the beginning experimenter reads to child only two lines and asks him to repeat them. If experimental person makes mistake the rhyme is repeated maximum 3 times. After that they pass to learning of the following two lines. When both parts of the rhyme are learnt, experimenter reads the whole rhyme from the beginning to the end. In case of mistake repeats only three times.

Assessment:

8 points – if both parts of the rhyme are reproduced quickly;

5 points – if words in the rhyme are rearranged or added;

3 points – the sense is conveyed in his own words;

2 points – separate fragments are kept, but semantic connection is broken;

0 points – if a child can't repeat the rhyme at all.

4) Knowledge of articles:

Experimenter puts before a child 9 pictures, on which are depicted fruits, vegetable, flowers. Experimental person should name each of them. If experimental person says “This is a flower”, experimenter asks him to specify which one.

Assessment – each correct answer is assessed by 1 point.

5) Process of counting:

Subtext material is the same. Experimenter asks a child to count a number of items before him. If a child can not answer the question experimenter repeats again: “Start again!”. The task is assessed as follows:

5 points – counting without motoric components;

4 points – silent counting only with movement of lips;

3 points – counting with whisper and moving of head;

2 points – counting with finger, so that finger does not touch an item;

1 point – experimental person touches pictures with finger;

0 points – refusal to perform the task.

6) Knowledge of sequence of counting

If a child performed the 5th task, experimenter tells him: “Count till you can”. After 22 he stops a child. The point is the maximal figure counted by a child.

7) “Item classification”

Materials of subtest are again pictures of fruits, vegetable and flowers. 3 baskets are added. We ask a child to put in one upper fruits, in the middle – vegetables and in the last – flowers.

For each correctly classified item 1 point is added. Maximal assessment of this subtest is 3 points.

8) “Perception of quantity”

The same material and one sheet of paper. In case the 7th task is performed correctly three baskets filled with fruits, vegetables and flowers are placed in front of a child. Experimenter covers the lower basket (with flowers) a sheet of paper and asks children: “Tell me how many fruits and vegetables are in front of us?” If child makes mistake during the process of counting, experimenter allows him twice to count correctly represented pictures.

If experimental person counts only fruits, or only vegetables, then experimenter places them in front of a child without basket and asks to count again.

After that experimenter asks to perform the same procedure with basket of flowers.

Assessment: 3 points are given for fulfillment of the first part of the task without mistake and 3 points for fulfillment of the second part, i.e. the highest point for correct performance is 6. For each help 1 point is subtracted.

9) Knowledge and classification of forms of figures

Material – 9 geometric figures: 3 circles, 3 triangles, 3 quadrangles and one sheet of paper with images of triangle, quadrangle and circle. At the beginning experimenter checks if child knows the given figures, if no, experimenter names them himself. After that experimenter asks a child to explain why triangle is called triangle, quadrangle – quadrangle. Then experimenter mixes figures placed before a child and asks him to place similar figures together.

Assessment: each part of the task is assessed separately.

I stage – 1 point for each correctly named figure, maximal point of the given task – 3.

II stage - 1 point for each correctly explanation

III stage - 1 point for each correctly classified totality

10) Comparison of pictures

Experiment material consists of 4 pairs. Each pair of pictures is almost identical. Only several among them are different. The child is asked to find these differences.

Assessment:

2 points - correct decision without help;

1 point - correct decision in case of experimenter’s help;

0 points – if child couldn’t perform the task at all.

11) Reproduction of rhyme

Experimenter asks experimental person to remember the rhyme, which he has learnt in the 3rd task. If experimental person failed to remember the rhyme at all, the rhyme learned by heart analogically to the 3rd task.

12) Ability to differentiate color and form

Experiment material – unfinished figures of certain color. Experimenter asks a child to find missing details for rectangle. For correct performance of the task the child should consider two marks – color and form. Experimental person is given 4 tasks in subtest. Each correctly performed task is assessed by 1 point.

13) Finding of analogy

The child is given certain proofs, and then experimenter puts him a question, which can be answered only by forming analogical proofs.

E.g.: The bird is singing, dog?

The lemon is sour, sugar?

The task consists of 6 questions

Each correct answer is assessed by 1 point

14) Copying

Experimental person is given 2 figures for copying (triangle and cross) and 2 ornaments. A child has to copy these figures with maximal accuracy.

6 points – drawing is alike, form and proportions are similar to sample;

3 points - drawing is alike, but with little distortion;

2 points – main form is inaccurate, but drawing is alike the sample with some details;

0 points – drawing does not simulate the sample at all.

Maximal assessment in the given task is 24 points.

15) Description of picture

Experimental person is given a picture, which is to be described. 4 aspects are considered during assessment:

1) Speaking ability (stammering or speaks fluently);

2) Structure of sentence;

3) Articulation;

4) Ability to fantasize.

Assessment in case of I aspect:

2 points – child speaks fluently, without stammering;

1 point – child speaks fluently, but with pauses;

0 points – child speaks with stammering.

Assessment in case of II aspect:

8 points – child uses well structured, compound sentences, uses conjunctions.

6 points – child uses compound sentences, but stereotypic and one conjunction;

4 points – child uses only simple sentences;

1 point – child speaks with incomplete sentences.

Assessment of III “articulation” aspect:

2 points – if child distinctly pronounces sounds;

1 point – child pronounces sounds indistinctly.

IV aspect – “fantasy” is assessed by 1 point.

The given test made it possible to study intellectual readiness of first graders. The test was standardized by us.

We standardized G Vitslak’s test – “Ability to study at school”. We conducted study in ten schools of Tbilisi on 211 pupils from 5 year-old and 8 months to 7 year-old.

The final result of the given test is a sum of points received in subtest.

We received that $m=92$, $S=12$

90 points received 31 pupils, z of the given group = - 0,17

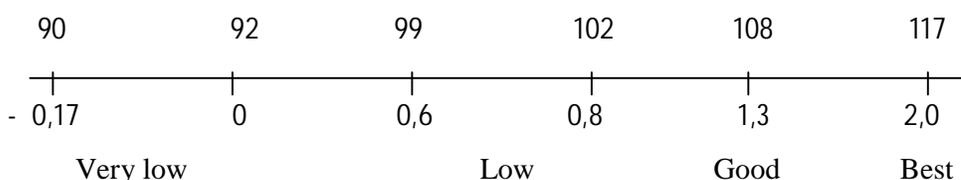
92 points received 40 pupils, z of the given group = 0,00

99 points received 64 pupils, z of the given group = 0,6

102 points received 46 pupils, z of the given group = 0,8

108 points received 13 pupils, z of the given group = 1,3

117 points received 30 pupils, z of the given group = 2,0



4 groups of children were singled out:

90-92 points are corresponding to group of children, which received very low showings in the test.

99-102 points are corresponding to group of children, which received low showings in the test.

108 points are corresponding to group of children, which received good showings in the test.

117 points are corresponding to group of children, which received best showings in the test.

The given test was adapted in Russia by T Dosmaeva and A. Leaders. The sum of the received points is converted into percents by means of Leaders’s normative table. **The received result is the showing of child’s level of mental development and his intellectual readiness.** The average norm according to Leaders is considered to be 96,5 points, i.e. 60%. And we conferred 90-102 point to the low showing, and 108-117 points to very high showing. Children, who receive from 90 to 102

points, are not intellectually ready for school, and children, who receive 108-117 points, are ready intellectually for school.

G. Vitslak worked out the given test in order to plan further developmental works. He assumed that the aim of psycho-diagnostic research is not determination of level of mental development, but obtaining psychological information about child, basin on which we can plan pedagogical work stimulating development. That's why some authors call this test diagnostic-correcting program.

As school readiness means also social-personal readiness, we will rely on the opinion of L. Vigodsky that child is ready for school in case he has formed school motivation (cognitive and social), able to **regulate any** action, which is closely connected to motivated sphere, is able to receive aim set from without and to form intention in order to get desirable results. Without these abilities a pupil will not be able to work according to sample and rules, which is necessary for successful study in the 1st grade.

For investigation of a pupil's social-personal readiness we have chosed the plan elaborated by N. Gutkina: "verification of school readiness of 6-7 year old children", which consists of the following methods:

- 1) The method – "tale" – investigates dominant motive of a child;
- 2) The method – "investigation of collaboration skill";
- 3) The method – "Home" – investigates the skill of organization according to the model.
- 4) The method – "not say yes and no" – investigates the skill of working according to the rules.

I method "tale" – investigates dominant motive of a child:

The experimentator takes the child into the room, where not so pleasant toys are laid on the table. The child is asked to observe the toys. Then the experimentator reads a tale to the child. But he stops reading it in a very interesting place and asks the trial person what he wants, wheter listening the tale to the end, or playing.

The children having significant cognition interest chose to listen to the tale to its end, but the children having weakly developed congnitonal interest chose playing.

II method – "Investigation of collaboration skilss"

The purpose of the given method is to investigate skills of communication and collaboration.

Material: An image of glove and 2 boxes of colored pencils.

The method consists of two series and a pair of children are participating in the investigation.

Instruction for I series: Take the image of gloves and paint it in colors in such manner, that the two gloves should be the same. At first you must talk between about what kind of ornamental

pattern you will paint, and what colors you will use. In order to accomplish the assignment both of you will have own pencils.

Instruction for II series: Now we will give you new gloves and paint them in colors in such way that the both gloves must be the same. But at this time both of you will have one box of pencils and in order to fulfill the assignment well, you should borrow pencils from each other.

Skill of collaboration will be assessed according to the following signs:

- 1) How well the children could negotiate; How they managed to make decisions: which method they used for this: convince, compel, negotiate;
- 2) How well the children were controlling the process of fulfillment of assignment. Whether they had any response on the fact that the partner had not fulfilled the primary purpose;
- 3) Whether they assessed their own and partner's work;
- 4) Whether the children were helping to each other.

Assesment:

High level of collaboration – the children could negotiate, they made decision, they were controlling each other at the time of doing the job, they were borrowing pencils from each other without quarrel.

Medium level of collaboration – despite the children made decision, they did not control each other any more, or they only were criticizing each other.

Low level of collaboration – The children worked independently, they were not helping each other.

III method – “Home”

This method is a job, where the child must draw an image of a house. Given task gives us an ability to investigate the child's ability, the level of development of **any regulation of action** and **any attention**.

Material – An image of a house.

Instruction: There is a sheet with an image of house and a pen in front of you. Try to draw on this sheet a house like this one. If an error occurs do not delete it with eraser but continue drawing above of it.

Assessment – amount of details. The child is drawing with memory, if it make comparison between the drawing and the model, then how often child's attention will be switched to another objects, how the child's drawing looks like the model.

When assessing of the given assignment attention should be given the following mistakes: missing of any details, disturbing of proportions, incorrect location of details in space, inclination of lines with more than 30^0 angle.

High level – (without mistakes);

Medium level – (1 or 2 mistakes);

Low level – (3 or more mistakes).

IV method – “not say yeas and no” – investigates the ability of operation according to the rules.

The method is a play, which gives the child ability to act according to the rules. Fulfilling of the given assignment is impossible without **regulation of any attention, memory and action**.

Instruction: “Now we will play a game, in the process of which is not allowed to sat the words “Yes” and “No”. Repeat, what words you must not say (the person participating in trial repeats given words). And now be attentive, I’ll ask you a question, and answer without saying words “Yes” and “No”, is it clear?”.

Acting according to the rule means the existence of any attention and memory. The child can answer the questions correctly if it always keeps in mind the instruction and if its memory is not dispersed. The children must control their will at the time of saying answers - ”yes” and “no” and it must think about the answer as well. Execution of all of these is impossible without **regulation of any action**.

Processing of results takes place by means of noting mistakes. The words “really” or “never” is not considered as mistakes. It is admissabel if the child is silent and it only shakes its head.

Questions:

- 1) Do you like going to school?
- 2) Do you like waiching a cartoon?
- 3) Are you a boy? (are you a girl?)
- 4) Do crocodiles fly?
- 5) Do you have a brother?
- 6) Is it cold in summer?
- 7) Is the snow black?
- 8) Do you like apple?

Assessment:

High level – 2 misktakes;

Medium level – 3-5 mistakes;

Low level – 5 and more mistakes.

As we noted above, when defining the purposes of your research we had based on the results of the research conducted by me, which was concerned with the influence of age difference and school readiness on academic performances of pupils.

We made all trials on 244 first graders, from who 128 were girls and 116 were boys. Their ages were 5-7 years. The results of the investigation were treated by means of a computerized statistic program SPSS. We received the results: 38% of pupils turned out to be intellectually immatured for school, and 62% of them were intellectually ready. 34% of girls turned out to be intellectually immatured, and 66% of them were intellectually ready. 44% of boys turned out intellectually immatured and 56% of them were intellectually ready. Among 5 agers 67% turned out to be intellectually unready, and 33% ready. Among 6 agers 34% turned out to be intellectually unready and 66% were ready to learn. 30% of 7 agers turned out to be intellectually immatured for school and 70% - ready. When making comparison between the group of 5 agers and 6-7 agers we got that $X^2=12,858$, $p=0,000$ (difference is reliable).

When investigating the scope of motivation we got the results: 45% of pupils turned out to have dominant motive of playing and 55% turned out to have learning motive. 37% of girls turned out to have dominant motive of playing and 63% - dominant motive of learning. 55% of boys turned out to have dominant motive of playing and 45% - dominant motive of learning. 65% of 5 age years old children turned out to have dominant motive of playing, and 35% of them - dominant motive of learning. 41% of 6 years old children turned out to have dominant motive of playing and 59% of them - dominant motive of learning. 38% of 7 years old children turned out to have dominant motive of playing and 62% of them - dominant motive of learning. (when comparing the groups of 5 and 6, 7 year old children we received $X^2=5,155$; $p=0,000$. Difference between the given groups is reliable. When investigating collaboration skills we received the following results: 64% of first graders were not able to collaborate, and 36% of them succeeded. 57% of girls could not collaborate and 43% of them succeeded. 70% of boys could not collaborate and 30% of them succeeded. As for age groups: 77% of 5 year old children could not collaborate, only 23% of them succeeded. 61% of 6 year old children could collaborate and 39% of them could not. 56% of 7 year old children could collaborate and 44% of them could not. When comparing 5 year old group results to 6-7 year old groups results we received $X^2=5,629$; $p<0,02$. That's why, difference between these groups is reliable.

When investigating will, after completing the method "house" we received the following results: 39% of pupils could not fulfill given task, and 61% succeeded. 34% of girls could not succeed in given tasks, and 66% of them could. 44% of boys could not fulfill the task, and 56% of them could. In age groups: 63% of 5 year old children could not act according to the model and 37% of them could. 33% of 6 year old children to act

according to the model and 67% of them could. 31% of 7 year old children could not make given task and 69% could. At the time of comparing 5 and 6, 7 year groups we received: $X^2=11,451$, $p=0,000$. Difference between given groups is reliable. The results of the method "not saying yes and no": 75% of first graders could not complete given task, only 25% of them could do it. Among girls 70% did not succeed in accomplishing of this task, only 30% succeeded. 81% of boys did not succeed and only 19% of them could manage to fulfill the task. Among the group of 5 year old children 94% of pupils could not consider the rules, only 6% could. 71% of pupils in 6 year old children group could not consider the rules, only 29% of them could do this. 62% of pupils in 7 year old children's group could not follow the rules. Only 38% of them did it. When comparing 5 and 6, 7 year old groups we received, that $X^2=4,461$, $p<0,05$. The difference between groups is reliable. By means of this our first hypothesis was confirmed. **Some part of first graders is not ready nor intellectual nor personal view of point for school. Majority of 5 year old children is not matured enough for school.**

After all this our purpose was to define whether disharmony between intellectual readiness and social-personal readiness is maintained. Considering Sh. Chkhartishvili's opinion that average pace of social-personal development of pre-school age children falls behind the average pace of their intellectual development. We compared results of G. Viklitski's test to results of the every methods of the program elaborated by N. Gutkina. After comparing the results of G. Vitlitski's test to the results of investigation of motivation we received: Among them, who was not ready intellectually for school learning, in 76% the motive of playing turned out to be main, and in 24% - the motive of learning. Among them, who were intellectually ready for school learning the motive of playing turned out to be dominant in 15% of pupils, and the motive of learning was dominant in 85%. $r = 0,607$. It turned out, that majority of pupils who was intellectually ready for school learning had dominant learning motive, but the pupils who were not intellectually ready – motive of playing. After all this we compared data of intellectual readiness to the results of investigation of "collaboration skills". Among them, who were not intellectually ready for school learning 88% of pupils could not collaborate, only 12% could it. And among them, who were intellectually ready for school learning 47% of pupils could not collaborate, only 53% could it $r = 0,418$. Thus, in this examples relation between intellectual readiness and collaboration was shown.

After comparing the results of intellectual readiness and the method "house" we received that among pupils, who were not intellectually ready for school, 80% of pupils could not act according to the model, only 20% of them could do this. Among the children who were intellectually measured 18% of pupils could not act according to the model, only 82% succeeded ($r=0,597$); In this example a correlation between intellectual readiness and ability to act according to the model was shown. And finally, when comparing intellectual readiness and the method named "not saying yes and no", which investigates the ability to act according to rules, we received, that among them, who were not intellectually ready for school learning, 98% could not follow the rules, only 2% could to this. Among them, who were intellectually ready for school, 53% could not do given

job, only 47% could do this. When comparing results of intellectual readiness and investigating of the ability to act according to rules we received $r=0.483$; In this example was shown a correlation between intellectual readiness and ability to act according to rules too. In the fourth examples correlation is reliable, that's why we can conclude, that the pupils who are intellectually ready for school learning have dominant learning motive. They can collaborate with their peers, understand teacher's instructions, consider rules and act according to model. As for pupils, who are not ready for school learning, dominant motive for them is playing. They have difficulty to collaborate with their peers, understand teacher's instructions and act according to model.

We compared the results of G. Vitlatski's test named "learning skill in school" to the details of N. Gutkina's diagnostic program named "determining of readiness for school learning of 6-7 year old children". We received that there is high coordination among these methods and the results of G. Vitlitski's test and we can consider it as one factor. We can may this factor as the **factor of psychological readiness for school**. 58% of dispersion points to this coordination as well.

Parameters	Coordination
Intellectual readiness	0.746
Investigation of dominant motive	0.759
Investigation of collaboration skills	0.761
Investigation of action skill according to model	0.720
Investigation of action skill according to tules	0.806

There was not found any disharmony between intellectual readiness and socio-personal readiness after our study. Thus: **1. A great part of first graders turned out to be intellectually ready for school learning; 2. For the majority of first graders learning motive turned out to be dominant; 3. The majority of first graders have difficulty in collaboration; 4. A great part of first graders managed to work according to the model; 5. The majority of first graders had difficulties in understanding and taking into account instructions given by senior; 6. The majority of five year old children is socially immaturred for school, for the majority of five year old children dominant is motive of playing, they can not collaborate, have difficulties in working according to the model and folloing the rules.** The pupils who are intellectually ready for school have dominant learning motive. They can collaborate with their peers, understand teacher's instructions, consider rules and act accoding to the modeli. As for pupils, who are not intellectually ready for school, for them dominant is motive of playing. They have difficulties in collaboration with their peers, following rules and acting according to the model.

On the basis of the given studies we decided to elaborate helpful developmental program for first graders in the form of developing lessons. The majority of first graders had difficulties in working considering rules (ability to work according to rules means any attention, any memory, any regulation of acting) and collaboration with their peers. But learning in school demands to follow lesson routine, acting according to teacher's instructions and everything this takes place among peers. That's why it is not doubtful that named skills are very important for learning. After analysing findings of G. Vitlitski's test we choosed out those sub-tests in which the majority of investigated children had got low scores. 78% of investigated first graders received low scores in the sub-tests which study operating skills by means of quantitive parameters (counting of figures, simple arithmetic operations). 55% received low evaluation in the sub-tests which studies any memory, and 53% received low scores in sub-test which study diferentiation of color and form (executing of such task is not possible without appropriate level of any attention and logical reasoning). The rest of sub-tests were performed by the group well. When we singled out the group of children who were not matured for school, it turned out that 90% of them were receiving low scores in the sub-tests which study any memory. 92% of those children received low scores in the sub-tests which study the ability of diferentiation of forms and attention. 70% of pupils receive low scores in the sub-test which study general cognition, 75% of pupils have difficulty in the sub-test which studies the ability of work with pencil and pen. If we consider that primary motives for intellectually immaturred children for school are motives of playing, it will be clear that they have difficulties in collaboration with their peers, acting according to models and rules, that's why starting school for them becomes the beginning of permanent failure. **Because learning in school necessarily means certain level of any attention, memory, general cognition, as well as existence of the ability of observing the rules and collaboration, at the time of elaboration of developing lessons our goal was developing of motivative, will, intellectual realms to the level of school readiness rather than teaching the children writing, reading and calculation.** Because in Georgia every children who applies are allowed to enter school, we included our lessons in the first grade program. Duration of the lesson was 40 minutes. We were delivering the lesson twice a week and had 16 pupils in each group. We considered the following principles in the program: 1. Development of psychic realm should be fulfilled at the expense of development and transformation of motivational realm; 2. Approach to the child should be individual; 3. Actual level of development of child should be taken into account; 4. Lessons should be delivered in the form of playing, so as to the children were active (according to aging periodization 5-6 years old child is considered under school age, and for children under school age primary activity is playing). 5. Attitude towards the children had to be kindly and friendly; 6. Great attention had to be given the ability of first grader to appreciate indipendently its own work.

The goal of the methods elaborated by me was to develop any action and cognitional motives, and thus, to develop different pshychical processes (thought, memory, attention) generally. Developmental method has a

form of experiment and is based on the following opinions: 1) For artificially developing cognitive motivation and will we used a situation in which the satisfaction of positive relationships with adults and getting new impressions, which is basis of development of child's psychics. In order to satisfy their emotional relationship with adults children carry out their cognitive activity, and then the time comes, when the result of action (that is to say achievement of goal) is more important for the children, than the motive, which pushed them to the action. At this time transfer of motive is carried out on goal and creating a new motive. In such instant new motive is cognitive motive, because the action (goal) is in relation with cognition; 2) Along with development of any action it's necessary to exist a motivation, which pushes the child at the time of action to achieve positive results. We can consider such motive positive emotional relationship with adult, achieving of which the child can by means of high-quality performing an assignment. But in order to perform the assignment so well it's necessary to manage one's own power, that is to say, to overcome impulsiveness and show will. In this case, any action is stimulated with cognitive motive, which pushes him to perform the assignment with success. Some plays in our program took place in the form of competition among groups, and winning has its emotional nuance. Winning is possible only by means of observation of rules which means execution of any action. At the time of such playing child has any behavior: it sets its goal and achieves it – and named behavior is caused by the wish of winning and being praised. It's necessary to note, that specially created environment for competition gives ability to every child to experience joy of winning. The motive of winning finally will be in relation with positive emotions of a child and with new impressions experiencing of which it wishes again.

It is necessary to say that we mainly utilized such playings and assignments which implies development of psychic functions. Winner will become the participant who can observe, memorize well, think logically. The child does assignments in order to win, to satisfy the needs of praising and winning. At the time of winning the child obtains positive impression about itself, truth in its own power. Factually self-consciousness and motivational realm are developed. We included in our program the games of the following types: **1. Games directed to development of attention and memory; 2. Games directed to development of spatial orientation; 3. Games with rules; 4. Games directed to development of gross and fine motor skills in children; 5. Logical Games; 6. Games directed to development of phonemic hearing; 7. Games directed to development of collaboration skills; 8. Games directed to development of point of view and enriching of stock of lexic.** Here it is important to give some attention to the tasks, developed by us, which are based on the wish of child, to obtain new impressions, satisfy a sense of curiosity, to be praised by adult.

Some part of assignments (total 11 assignment) is a complicated version of D. Elkonin's method – “graphical dictation”. Instead of ornaments children draw animals, birds, images of humans, but they do not know what they will receive finally. The children activate their forces in order to satisfy their curiosity. That's why the assignment which requires from a first grader great effort and any regulation of acting, is very joyful and

interesting for him. The assignment courses with positive emotional charge. Methods of painting in colors are based on the same principle (total 16 assignment), where painting in colors of geometrical figures and different details takes place according to different rules. In case of performing the assignment correctly and fully there is seen images of different objects, animals. The type 3 assignment elaborated by us is still to be painted in colors, but the painting here is given in advance. The painting consists of different details and there are arithmetic operations written in details. The numbers are indicated on a sheet and every number corresponds one color. Performing of the named assignment courses according to the following rule: the child must initially calculate, and then see what color corresponds the number which was received after ariphmetic operation and only after this the child will do the assignment. During work the child is interested in what sirt is the final state of the painting and motive of performing the assignment correctly. We were conducting the playings as in form of competition, as without it. The content of games and assignments is of great importance, because the child's psychic functions develop by means of them: thoght, memory, attention, speech. Part of playings was made by me, part of them is folk playings and some part is made according to playings implemented in French schools. At every lesson we always chose one drawing assignment and one playing. We divided studied children before starting of the experiment into experimental and control groups. We had equal number of pupils in experiment and control groups - 122-122 pupils in each. Experimental and control groups were homogenic according to the following criterions: intellectual readiness, dominant motives, existing of collaboration skill, ability to act according to rules and model. The results obtained in the process of study of intellectual readiness is given in #2 table.

Results obtained in the beginning of academic year (in September)

Intellectual Readiness

Table #1

Group	Frequences	Absolute Frequency			Relative Frequency		Hi-square criterion	Reliability
		Not present	present	Total	Not present	present		
Experimental	Girls	22	42	64	34%	66%	0.000	Pp>0.05
	Boys	27	31	58	47%	53%		
	Total	49	73	122	40%	60%		
Control	Girls	23	41	64	36%	64%		
	Boys	26	32	58	45%	55%		
	Total	49	73	122	40%	60%		

Note: Difference between experimental and control groups is not reliable.

The results of dominant motive study are given in #2 table

First method – “motivation”

Table #2

Group	Frequency	Absolute Frequency			Relative Frequency		Hi-square criterion	Reliability
		Not present	present	Total	Not present	present	1.255	Pp>0.05
Experimental	Girls	19	45	64	30%	70%	Note: Difference between experimental and control groups is not reliable.	
	Boys	29	29	58	50%	50%		
	Total	48	74	122	39%	61%		
Control	Girls	28	36	64	44%	56%		
	Boys	35	23	58	60%	40%		
	Total	63	59	122	52%	48%		

Results of collaboration skill study are given in #3 table

Second method – “Collaboration”

Table #3

Group	Frequency	Absolute Frequency			Relative Frequency		Hi-square criterion	Reliability
		Not present	present	Total	Not present	present	1.255	Pp>0.05
Experimental	Girls	35	29	64	55%	45%	Note: Difference between experimental and control groups is not reliable.	
	Boys	42	16	58	72%	28%		
	Total	77	45	122	63%	37%		
Control	Girls	38	26	64	59%	41%		
	Boys	40	18	58	69%	31%		
	Total	78	44	122	64%	36%		

Results of study of acting ability are given in #4 table

Third method – “House”

Table #4

Group	Frequency	Absolute Frequency			Relative Frequency		Absolute Frequency	Relative Frequency
		Not present	present	Not present	present	Not present	1.715	Pp>0.05
Experimental	Girls	24	40	64	38%	62%	Note: Difference between experimental and control groups is not reliable.	
	Boys	29	29	58	50%	50%		
	Total	53	69	122	43%	57%		
Control	Girls	20	44	64	31%	69%		
	Boys	22	36	58	38%	62%		
	Total	42	80	122	34%	66%		

Results obtained during study of acting ability according to rules are given in #5 table

Fourth method – “Not say yes and no”

Table #5

Group	Frequency	Absolute Frequency			Relative Frequency		Absolute Frequency	Relative Frequency
		Not present	present	Not present	present	Not present	2.849	Pp>0.05
Experimental	Girls	43	21	64	67%	33%	Note: Difference between experimental and control groups is not reliable.	
	Boys	44	14	58	76%	24%		
	Total	87	35	122	71%	29%		
Control	Girls	46	18	64	72%	28%		
	Boys	51	7	58	88%	12%		
	Total	97	25	122	80%	20%		

The groups according to the given ability are homogenic. After this we divided pupils of experimental and control groups according to their ages. We picked out 5, 6, 7 years old groups. Results of this study are given in #6 table.

Results obtained in the beginning of academic year (in September) according to age groups

Intellectual Readiness

Table #6

Group	Ages	Absolute Frequency			Relative Frequency	
		Not present	Present	Total	Not present	Present
Experimental	5 years old	17	6	23	74%	26%
	6 years old	29	60	89	33%	67%
	7 years old	3	7	10	30%	70%
Control	5 years old	15	10	25	60%	40%
	6 years old	32	59	91	35%	65%
	7 years old	2	4	6	33%	67%

Note: Difference between experimental and control groups is not reliable.

Results of study of dominant motive are given in #7 table

Fursts method - "Motivation"

Table #7

Group	Ages	Absolute Frequency			Relative Frequency	
		Motive of Plying	Motive of Learning	Total	Motive of Plying	Motive of Learning
Experimental	5 years old	14	9	23	61%	39%
	6 years old	31	58	89	35%	65%
	7 years old	3	7	10	30%	70%
Control	5 years old	17	8	25	68%	32%
	6 years old	43	48	91	47%	53%
	7 years old	3	3	6	50%	50%

Note: Difference between experimental and control groups is not reliable.

Results of study of collaboration skills are given in #8 table

Second method - "Collaboration"

Table #8

Group	Ages	Absolute Frequency			Relative Frequency	
		Not present	Present	Total	Not present	Present
Experimental	5 years old	17	6	23	74%	26%
	6 years old	57	32	89	64%	36%
	7 years old	3	7	10	30%	70%

Control	5 years old	20	5	25	80%	20%
	6 years old	52	39	91	57%	43%
	7 years old	6	0	6	100%	0%

Note: Difference between experimental and control groups is not reliable

Results of study to act according to model are given in #9 table

Third method – “House”

Table #9

Group	Ages	Absolute Frequency			Relative Frequency	
		Not present	Present	Not present	Present	Not present
Experimental	5 years old	14	9	23	61%	39%
	6 years old	35	54	89	39%	61%
	7 years old	4	6	10	40%	60%
Control	5 years old	16	9	25	64%	36%
	6 years old	25	66	91	27%	73%
	7 years old	1	5	6	17%	83%

Note: Difference between experimental and control groups is not reliable.

Results of study to act according to rules are given in #10 table

Fourth method – “Not say yes and no”

Table #10

Group	Ages	Absolute Frequency			Relative Frequency	
		Not present	Present	Not present	Present	Not present
Experimental	5 years old	21	2	23	91%	9%
	6 years old	62	27	89	70%	30%
	7 years old	4	6	10	40%	60%
Control	5 years old	24	1	25	96%	4%
	6 years old	67	24	91	74%	26%
	7 years old	6	0	6	100%	0%

Note: Difference between experimental and control groups is not reliable.

We compared data of intellectual readiness to data of study of dominant motives. Obtained results are given in #11 table.

Results obtained in the beginning of an academic year (in September)

Intellectual readiness and and first method – “motivation”

Table #11

		Absolute Frequency			Relative Frequency		Hi-square criterion	Reliability
Group	Readiness	Not	Yes	Total	Not	Yes		
Experimental	Not present	37	12	49	76%	24%	3.719	Pp>0.05
	Present	11	62	73	15%	85%		
	Total	48	74	122	39%	61%		
Control	Not present	38	11	49	78%	22%		
	Present	25	48	73	34%	66%		
	Total	63	59	122	52%	48%		

Note: Difference between experimental and control groups is not reliable

Results obtained comparing intellectual readiness and collaboration skill are given in #12 table

Intellectual readiness and second method – “Collaboration”

Table #12

		Absolute Frequency			Relative Frequency		Hi-square criterion	Reliability
Group	Readiness	Not	Yes	Total	Not	Yes		
Experimental	Not present	43	6	49	88%	12%	0.438	Pp>0.05
	Present	34	39	73	47%	53%		
	Total	77	45	122	63%	37%		
Control	Not present	40	9	49	82%	18%		

Note: Difference between experimental and control groups is not reliable

	Present	38	35	73	52%	48%	
	Total	78	44	122	64%	36%	

Results obtained comparing intellectual readiness and acting according to model are given in #13 table

Intellectual rediness and third method – “House”

Table #12

		Absolute Frequency			Relative Frequency		Hi-square criterion	Reliability
Group	Readiness	Not	Yes	Total	Not	Yes	0.434	Pp>0.05
Experimental	Not present	39	10	49	80%	20%	Note: Difference between experimental and control groups is not reliable	
	Present	14	59	73	19%	81%		
	Total	53	69	122	43%	57%		
Control	Not present	31	18	49	63%	37%		
	Present	11	62	73	15%	85%		
	Total	42	80	122	34%	66%		

After comparing studies of intellectual readiness and acting according to model we concluded: in intellectually immatured children’s group of experimental group 98% of children could not work according to rules, only 2% of them did it. In intellectually ready children 57% of children could not act according to rules, only 43% did it, $r=0,483$. In given instance a correlation between intellectual readiness and ability to observe rules was seen. In control group we received the following results: among intellectually unready children 98% could not observe rules and only 2% succeeded. Among intellectually matured children 67% could not observe rules, only 33% of them did it, $r=0,443$. In given instance the correlation was seen too (see table #14).

Intellectual readiness and fourth method – “not say yes and no”

Table #14

		Absolute Frequency			Relative Frequency		Hi-square criterion	Reliability
Group	Readiness	Not	Yes	Total	Not	Yes	2.861	Pp>0.05
Experimental	Not present	48	1	49	98%	2%	Note: Difference between experimental and control groups is not reliable	
	Present	39	34	73	53%	47%		
	Total	87	35	122	71%	29%		
Control	Not present	48	1	49	98%	2%		
	Present	49	24	73	67%	33%		

	Total	97	25	122	80%	20%	
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After delivering developing lessons, at the end of an academic year we repeated the study, we used G. Vitlitski's test named "study of learning in school" and N. Gutkina's program "Investigating of school readiness of 6-7 year old children" again. Obtained results are given in #15 table.

Results obtained at the end of academic year (in May)

Intellectual readiness

Table #15

Group		Absolute Frequency			Relative Frequency		Hi-square criterion	Reliability	
		Ready	Yes	Total	Not	Yes			
Experimental	Girls	4	60	64	6%	94%	29.079	Pp=0.000	
	Boys	4	54	58	7%	93%			
	Total	8	114	122	7%	93%			
Control	Girls	21	43	64	33%	67%			Note: Difference between experimental and control groups is reliable
	Boys	21	37	58	36%	64%			
	Total	42	80	122	34%	66%			

Results obtained in study of dominant motives are given in #16 table

First method – "Motivation"

Table #16

Group		Absolute Frequency			Relative Frequency		Hi-square criterion	Reliability	
		Not present	Present	Total	Not present	Present			
Experimental	Girls	1	63	64	2%	98%	16.062	Pp=0.000	
	Boys	4	54	58	7%	93%			
	Total	5	117	122	4%	96%			
Control	Girls	18	46	64	28%	72%			Note: Difference between experimental and control groups is reliable
	Boys	22	36	58	38%	62%			
	Total	40	82	122	33%	67%			

In the study of collaboration ability we received that $\chi^2=32,995$. $p=0,000$. Difference between the given groups is reliable, which did not take place in September's results. (table #17).

Second method – “Collaboration”

Table #17

Group		Absolute Frequency			Relative Frequency		Hi-square criterion	Reliability
		Not present	Present	Total	Not present	Present		
							32,955	Pp=0.000
Experimental	Girls	4	60	64	6%	94%	Note: Difference between experimental and control groups is reliable	
	Boys	7	51	58	12%	88%		
	Total	11	111	122	9%	91%		
Control	Girls	32	32	64	50%	50%		
	Boys	37	21	58	64%	36%		
	Total	69	53	122	57%	43%		

In the study of acting according to model we received that $\chi^2=2,924$; $p>0,05$. Difference between the given groups is not reliable. Given ability is almost the same for experimental and control groups (see table #18).

Third method – “House”

Table #18

Group		Absolute Frequency			Relative Frequency		Hi-square criterion	Reliability
		Not present	Present	Total	Not present	Present		
							2,924	Pp>0.05
Experimental	Girls	0	64	64	0%	100%	Note: Difference between experimental and control groups is not reliable	
	Boys	4	54	58	7%	93%		
	Total	4	118	122	3%	97%		
Control	Girls	7	57	64	11%	89%		
	Boys	10	48	58	17%	83%		
	Total	17	105	122	14%	86%		

In the study of ability of observing rules we received that $\chi^2=10,040$; $p=0,0000$. Difference between the given groups is reliable (see table #19).

Fourth method – “not say yes and no”

Table #19

Group		Absolute Frequency			Relative Frequency		Hi-square criterion	Reliability
		Not present	Present	Total	Not present	Present		
							10.040	Pp=0.000
Experimental	Girls	13	51	64	20%	80%	Note: Difference between experimental and control groups is reliable	
	Boys	23	35	58	40%	60%		
	Total	36	86	122	30%	70%		
Control	Girls	31	33	64	48%	52%		
	Boys	40	18	58	69%	31%		
	Total	71	51	122	58%	42%		

We divided first graders according to age groups again. Obtained results are given in #20 table.

Results obtained at the end of academic year (in May) according to age groups.

Intellectual readings

Table #20

Group		Absolute Frequency			Relative Frequency	
		Not ready intellectually	Ready intellectually	Total	Not ready intellectually	Ready intellectually
Experimental	5 years old	2	21	23	9%	91%
	6 years old	4	85	89	4%	96%
	7 years old	2	8	10	20%	80%
Control	5 years old	13	12	25	52%	48%
	6 years old	28	63	91	31%	69%
	7 years old	1	5	6	17%	83%

Note: Difference between experimental and control groups is not reliable.

Results obtained in the study of dominant motive are given in #21 table

First method – “Motivation”

Table #21

Group		Absolute Frequency			Relative Frequency	
		Motive of playing	Motive of learning	Total	Motive of playing	Motive of learning
	5 years old	1	22	23	4%	96%

Experimental	6 years old	4	85	89	4%	96%
	7 years old	0	10	10	0%	100%
Control	5 years old	7	18	25	28%	72%
	6 years old	29	62	91	32%	68%
	7 years old	4	2	6	67%	33%

Note: Difference between experimental and control groups is not reliable.

In the study of the ability of collaboration we received, that: 96% of pupils could collaborate in 5 years of experimental group, 4% of them did not succeed. In the group of 6 years old children 89% of pupils could collaborate, 11% could not. 100% of 7 years old children succeeded. Among 5 years old children of control group 28% could collaborate and 72% could not. In 6 years old children of this group 32% could collaborate, 68% could not. In 7 years old children of this group 67% could collaborate, 33% could not. 100% of 7 years old children succeeded (hyperactivity syndrome) (see table #22).

Second method – “Collaboration”

Table #22

Group		Absolute Frequency			Relative Frequency	
		Not present	Present	Total	Not present	Present
Experimental	5 years old	1	22	23	4%	96%
	6 years old	10	79	89	11%	89%
	7 years old	0	10	10	0%	100%
Control	5 years old	17	8	25	68%	32%
	6 years old	46	45	91	51%	49%
	7 years old	6	0	6	100%	0%

Note: Difference between experimental and control groups is not reliable.

Results obtained in the study of acting according to model are given in #23 table.

Third method – “House”

Table #23

Group		Absolute Frequency			Relative Frequency	
		Not present	Present	Total	Not present	Present
Experimental	5 years old	0	23	23	0%	100%
	6 years old	3	86	89	3%	97%
	7 years old	1	9	10	10%	90%
Control	5 years old	5	20	25	20%	80%
	6 years old	11	80	91	12%	88%
	7 years old	1	5	6	17%	83%

Note: Difference between experimental and control groups is not reliable.

When studying the ability to act according to rule we received that among 5 year old children of experimental group 61% could observe rulee and only 39% of them could not. In control group 20% succeeded and 80% failed. Among 6 year old children of experimental group 72% of pupils could consider the rule and 28% of them could not. In control group 53% of pupils could not observe rule and only 47% of them could. Among 7 year old children of experimental group 80% could observe the rule and 20% could not. In control group 50% succeeded and 50% could not. (see table #24).

Fourth method – Not say yes and no

Table #24

Group		Absolute Frequency			Relative Frequency	
		Not present	Present	Total	Not present	Present
Experimental	5 years old	9	14	23	39%	61%
	6 years old	25	64	89	28%	72%
	7 years old	2	8	10	20%	80%
Control	5 years old	20	5	25	80%	20%
	6 years old	48	43	91	53%	47%
	7 years old	3	3	6	50%	50%

Note: Difference between experimental and control groups is not reliable.

When studying intellectual readiness in experimental group we compared results of September and May and received:

Correlation (between September and May results)

Table #25

Group	Readiness	First method	Second method	Third method	Fourth method
Experimental	0.730	0.127	0.241	0.117	0.410
	0.000	0.058	0.008	0.199	0.000
Control	0.896	0.641	0.719	0.506	0.599
	0.000	0.000	0.000	0.000	0.000

No doubt that in control group a high correlation is seen between results obtained in September and May, and between pupils of experimental group correlation is quite low. Are these differences between correlations caused by above listed activities? On the basis of conducted investigation we received that significant differences were seen between experimental and control groups. Given difference is caused by improvement of results in experimental group (see table #26).

After measures conducted by use the majority of pupils improved in their abilities of intellectual readiness for school. For their majority school motive turned out to be dominant. The pupils obtained abilities to collaborate not only with their peers but as well with adults too. As for acting according to model, there was seen relatively low improvement.

Difference between the results of May and September

Table #26

Group	Difference	Readiness		Study of dominant motive		Study of collaboration ability		Study of acting ability according to given model		Study of acting ability according to given rule		Total	
		abs	%	abs	%	abs	%	abs	%	abs	%	abs	%
Experimental	Results worsened	0	0	1	1	0	0	1	1	0	0	2	0,3
	Results remained the same	81	66	77	63	56	46	71	58	71	58	356	38
	Results improved	41	34	44	36	66	54	50	41	51	42	254	41
Control	Results worsened	2	2	1	1	4	3	1	1	0	0	8	1
	Results remained the same	111	91	97	80	105	86	95	78	96	79	504	85
	Results improved	9	7	24	20	10	11	26	21	26	21	58	10

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received, that $\chi^2=3602,08$; $p=0,000$. Difference between the given groups is reliable.

In the third grade using of appraisal system gave use ability to compare to each other experimental and control groups concerning academic performance. In the school, where we were conducting the study appraisal system is 10 score system. As the criterium of academic performance we picked up average performance according to 3 subjects (native language, mathematics, foreign language). Obtained results are given in table #27.

Intellectual readiness and academic performance

Table #27

Group	Readiness	Mark					Total	Hi-square criterium	Reliability
		6	7	8	9	10			
Experimental	Not present	3	21	21	4	0	49	486.651	P=0.000
		6%	43%	43%	8%	0%			
	Present	0	2	33	37	1	73		
		0%	3%	45%	51%	1%			
		29	15	3	2	49	73.006	P=0.000	

	present	59%	31%	6%	4%	0%			
	Present	2	12	39	20		73		
		3%	16%	53%	27%	0%			
total	Not present	32	36	24	6		98	200.634	P=0.000
		33%2	27%	24%	6%	0%			
	Present	2	14	72	57	1	146		
		1%	10%	49%	39%	1%			

We picked out the group consisted of 5 year old children (who became 6 after September). In such experimental group we had 23 children, and 17 among them were not intellectually ready for schooling, and 7 children were ready. In experimental group we had 25 children who were 5 year old. Among them 15 were not ready and 10 were ready. The goal of our study was to determine whether there was any difference concerning academic performance between experimental and control groups. For this we compared the results of experimental group to the results of control group. We received, that $X^2=6,2$; $p<0,05$. Difference between experimental and control groups is reliable. 5 year old children of experimental group have better results compared to 5 year old children of control group.

Intellectual readiness and academic performance in 5 year old children

Table #28

	6		7		8		9		10		total
	abs	%	abs	%	abs	%	abs	%	abs	%	
Experimental group	1	4	7	30	10	44	5	22	0	0	23
Control group	8	32	8	32	6	24	3	12	0		25

Academic performance in 5 year old children group

Table #29

		6	7	8	9	10	sum
Experimental	Intellectually unready	1	7	6	2	0	16
	ready	0	0	4	3	0	7
Control	Intellectually unready	7	4	3	1	0	15
	ready	1	4	3	2	0	10

Among intellectually ready and unready children of experimental group $X^2=6,1$; $p<0,05$ (difference between given groups is reliable).

In control group between intellectually ready and unready children $\chi^2=7,2$; $p<0,05$ (difference between given groups is reliable).

After this we compared intellectually unready for school children of both experimental and control groups. $\chi^2=7,2$; $p<0,05$ (difference between given groups is reliable). But when comparing intellectually ready for school children of experimental and control groups we received that $\chi^2=5,85$; $p<0,05$ (difference between given groups is reliable). The activities conducted by us had their reflection on the academic performances of 5 year old children, on both intellectually unready and ready part of them.

We picked out intellectually unready for school children's group. Because we received high correlation among results of intellectual readiness and dominant motive, collaboration ability, acting according to given model and rules, we chose immatured children only according to parameters of intellectually unreadiness. We had equal number of immatured children in experimental and control groups, 49 children in each.

Correlation between the results of September and May for the group of intellectually immatured children for school

Table #30

Group	Intellectual rediness	Study of dominant motive	Study of collaboration ability	Study of working according to given model	Study of work according given rule
Experimental	0,65	0,351	0,298	0,291	0,543
Control	0,996	0,876	0,819	0,665	0,789

There was higher correlation seen in control group between study results of May and September. After this we divided the group of intellectually immatured children into age groups. We received, that correlation is higher in control group, than in experimental group. Is the difference between correlations of results of May and September of experimental and control groups caused by the activities conducted by us? After our study we received the following results (see table #31).

Correlation between September and May results in age groups of intellectually immatured children for school

Table #31

Group		Intellectual rediness	Study of dominant motive	Study of collaboration	Study of working according to given	Study of work according given rule

				ability	model	
Experimental Group	5 year old	0,271	0,283	0,111	0,276	0,247
	6 year old	0,454	0,312	0,268	0,205	0,412
	7 year old	0,385	0,465	0,527	0,408	0,611
Experimental	5 year old	0,864	0,786	0,721	0,475	0,508
	6 year old	0,896	0,855	0,758	0,636	0,613
	7 year old	0,869	0,632	0,752	0,832	0,891

Thus, differences between the results of experimental and control groups are caused by improvement of results of experimental groups. Given study confirmed our hypothesis that some part of first graders (especially the group of 5 year old children) is not ready for school. As we noted above, school readiness means physical, intellectual, socio-personal readiness. Immature for school is caused by the following causes: 1. Inhibition of development; 2. pedagogical fall behind; 3. Early damage of CNS; 4. Lack of environment and parenting; 5. Health issues. Because every child has its own history of development presence of these factors has impact on their immaturity for school. Let's remember that in 70s of past century as a result of reform in education system year for starting school was changed and it became 6 instead of 7. Because of this the program which was for 7 year old children was mechanically transferred to 6 year old children. But, as we know just at the age of 7 significant changes take place in child's physical, intellectual and social realms, and 5-6 years of age belongs under school period according to theories of age periodization. It is not surprising that 67% of 5 year old children are not matured for school.

On the basis of the study accomplished by us we can say, that in pupils who are intellectually ready for schooling have dominant learning motive, which is based on collaboration with their peers, understanding of teacher's interests, considering of rules of work, and using certain model in work. As for pupils who are intellectually immatured for school they have dominant playing motive. They have difficulties in collaboration with their peers, working observing rules and guiding in their work with certain model.

Table #32

Group	Difference	Intellectual rediness		Study of dominant motives		Study of collaboration ability		Study of ability to work according to given model		Study of ability to work according to given tulle		$\chi^2=2512,8$ $p=0,000$
		abs	%	abs	%	abs	%	abs	%	abs	%	

Experimental	Results worsened	0	0	1	1	0	0	1	1	0	2	Difference between the given groups is reliable
	Result remained the same	32	65	37	76	29	59	40	82	29	60	
	Results improves	18	35	11	22	20	41	9	18	20	40	
Control	Results worsened	2	4	1	2	9	6	1	2	0	0	
	Result remained the same	38	78	38	78	43	88	42	84	40	88	
	Results improves	9	18	10	20	3	6	7	14	9	18	

In experimental group $Z=13,49 > 1,97$ $p=0,000$. In control group $Z=8,75 > 1,97$ $p=0,000$.

Obtained results are caused by the following causes: it is well-known that motives of learning consist of 2 groups. In the first group are motives in connection with activities of learning: cognitive interests of child and need intellectual activity – which consists of relationship with adults and need of receiving praising from them. Thus, it is natural that a child with high intellect has more clear cognitive interests and need of intellectual activity. As for influencing school intellectual readiness on development of collaboration ability, given result is fully coincided with E. Kravtsova's theory about school readiness. We explain the relation between the abilities to work according to model and rules and intellectual readiness as following. Acting according to model means certain level of attention concentration, reception of space, senso-motor coordination, development of motor activity and working according to rules means any attention, certain level of any memory and thought. As for issue of development of immatured psychic function, the developing program elaborated by us is based on relationships of child with adults, touch with them and receiving recognition, needs of obtaining new impressions and winning in competition. In addition, winning in competitions is accompanied by positive emotional charge. At the time of developing lessons the children satisfy given need with activation of their forces and after correctly accomplishing assignment. Gradually needs of receiving of praising, winning is replaced by need of receiving new impressions and finally formation of cognitive need takes place. Need of cognitive is part of motive of learning, and according to N. Gutkina's opinion, if we make the child got interested then problems with memory and attention will not be present (if there is not present pathological disturbance of this function). The majority of children studied by us received low scores in G. Vitlitski's test and N. Gutkina's program just in those sub-tests which examine any memory and any attention of child. That's why, no doubt, that formation of motive of learning caused this function to develop. As for our developing program's

influence on academic performances of pupils, according to A. Gutkina the child thinks that the mark received by it in study process for good performance is equal to winning in the situation of playing. The both are based on the motive of achievement. That's why, with accomplishing of competition type assignment, we caused in children the wish of success that is to say receiving good marks. Thus, after developing lessons the motivation realm developed in the children, as well as regulation ability of any action, psychic functions. Everything these had their reflection on their academic performance.

Conclusions

We've studied intellectual and socio-personal readiness of first graders. Study was performed on 244 first graders, 128 of who were girls and 116 boys. Their ages were 5-7 years. Intellectual readiness was studied by means of G. Vitlitski's test named "Ability of learning in school, socio-personla readiness" and N. Gutkina's program named "study of psychological readiness for school of 6-7 year old children"

We received, that:

- 1. The majority of first graders in the beginning of academic year were intellectually ready for school.**
- 2. The majority of first graders turned out to have dominant learning motive.**
- 3. The majority of first graders had difficulties in collaboration with their peers.**
- 4. The majority of first graders could work according to given model.**
- 5. The majority of first graders had difficulties in working observing rules.**
- 6. The majority of 5 year old children turned out to be intellectually immatured for school, for them is dominant motive of playing, they had difficulties in collaboration with their peers, in working according to model and rules.**
- 7. When comparing the results of G. Vitlatski's and N. Gutkina's tests we received that the pupils who were ready intellectually for school had dominant learning motive, they can collaborate with their peers, observe rules and guide with model. But the pupils, who turned out not to be intellectually ready for school, had dominant playing motive, they had difficulties in collaboration with their peers, observing rules and guiding with model.**
- 8. The pupils who in their beginning of school life were not ready for school, had low academic performances in the next grades.**
- 9. On the basis of psychological characteristics of first graders we developed and implemented the program of developing lessons. Named program had positive impact on experimental group, both for the children who were intellectually**

immatured and the children who were matured. When comparing results of studies conducted in May and September we found significant difference. Given difference was caused by improvement of intellectual, motivative, will functions and social process of the children of experimental group.

- 10. Improvement of intellectual, motivative, will functions and social process in 5 year old children of experimental group took place as well.**
- 11. Improvement of intellectual, motivative, will functions and social process of the children in experimental group (including 5 year old) had impact on their academic performance as well.**

Recommendations

1. The majority of 5 year old children is immatured for school intellectually and socio-personally. Despite the results of 5 year old children was improved by means of our program, they still are lagged behind to 6 and 7 year old children with parameters of intellectual readiness. That's why, it will be better if the school admits only the children who will become 6 years old before September 6.
2. In the purpose of making best conditions for studying and developing of pupils collaboration of an psychologist and teacher is necessary.
3. Considering efficacy of our developing program it is advisable to implement lessons of this type in educational program of first graders.

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